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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,021	01/21/2004	Kenneth Roy Lorell	070602-0420	6521
31824	7590	05/04/2005		
MCDERMOTT WILL & EMERY LLP 18191 VON KARMAN AVE. IRVINE, CA 92612-7107			EXAMINER THOMAS, BRANDI N	
			ART UNIT 2873	PAPER NUMBER

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,021	LORELL ET AL.	
	Examiner	Art Unit	
	Brandi N. Thomas	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Election/Restriction.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> . |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-12 in the reply filed on 3/25/05 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (5477304) in view of Danial et al. (6327065 B1).

Regarding claims 1 and 11, Nishi, discloses, in figure 1, a steerable mirror assembly comprising: a mounting plate (20); a mirror (33) with a mounting surface and a reflective surface (col. 8, lines 40-42 and lines 47-50); at least one movable support member (21) coupled between the mounting plate (20) and a peripheral portion of the mirror (33) wherein the at least one movable support member (21) is adapted to allow the mirror (33) to move within a predetermined range along an axis perpendicular to the surface of the mirror (33) and adapted to allow tilting around axes parallel to a plane of the mirror (120) (col. 8, lines 42-46) but does not specifically disclose at least one flexible connector coupled between the mounting plate and a peripheral portion of the mirror wherein the at least one flexible connector is adapted to allow the mirror to move within a predetermined range along an axis perpendicular to the surface of the mirror and adapted to allow tilting around axes parallel to a plane of the mirror and a position

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sensor. Danial et al. discloses, in figures 3-6, at least one flexible connector (41, 42, 55, and 56) coupled between the mounting plate (40) and a peripheral portion of the mirror (30) wherein the at least one flexible connector (41, 42, 55, and 56) is adapted to allow the mirror (30) to move within a predetermined range along an axis perpendicular to the surface of the mirror and adapted to allow tilting around axes parallel to a plane of the mirror (30) (col. 3, lines 59-64 and col. 4, lines 1-4) and a position sensor (70) (col. 3, line 18). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Nishi with the flexible connectors and sensor of Danial et al. for the purpose of rotating and tilting the steerable mirror (col. 3, lines 59-64 and col. 4, lines 1-4).

Regarding claim 2, Nishi, discloses, in figure 1, a steerable mirror assembly, further comprising a mirror support structure (21), wherein the mirror (33) is mounted on the mirror support structure (21) (col. 8, lines 39-41).

Regarding claims 5 and 6, Danial et al. discloses the claimed invention but does not specifically disclose wherein the at least one flexible connector is a C-flexure or a U-flexure. However, it would have been obvious to use C-flexures or U-flexures, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art (In re Rose, 105 USPQ 237 (CCPA 1955)). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use C-flexures or U-flexures for the purpose of a C and a U-flexures ability to be confined in a small or awkward position.

Regarding claims 7 and 8, Danial et al. discloses the claimed invention but does not specifically disclose wherein the C-flexure is selected from the group of metal and plastic and

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the U-flexure is a composite multi-layer metal structure. However, it would have been obvious to use a C-flexure selected from the group of metal and plastic and a U-flexure is a composite multi-layer metal structure, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use (In re Leshin, 125 USPQ 416). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a C-flexure selected from the group of metal and plastic and a U-flexure is a composite multi-layer metal structure for the purpose of plastics capability of being molded or modeled and metals capability of being good conductors of electricity and heat.

Regarding claim 9, Nishi, discloses, in figure 1, a steerable mirror assembly wherein the mirror (33) has a central aperture (55) (col. 13, lines 11-12).

Regarding claim 10, Danial et al. discloses, in figures 3, a steerable mirror assembly, wherein the at least one flexure comprises three flexures (41, 42, 55, and 56) providing control over three degrees of freedom (col. 5, lines 46-50).

Regarding claim 12, Nishi, discloses, in figure 1, a steerable mirror assembly comprising: a mirror (33); a mirror support structure (21); a mounting plate (20) (col. 8, lines 40-42 and lines 47-50); a plurality of actuators (38, 40, and 42) connected to the mounting plate (20) (col. 9, lines 46-49) but does not specifically disclose a mirror support structure and a plurality of flexible members connected to the mounting plate and a plurality of position sensors. Danial et al. discloses, in figures 3-6, a plurality of flexible connectors (41, 42, 55, and 56) connecting the mirror support structure to the mounting plate (40) (col. 3, lines 59-64 and col. 4, lines 1-4) and a plurality of position sensors (70 and 80) (col. 3, line 18). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device

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of Nishi. with the flexible connectors of Danial et al. for the purpose of rotating and tilting the steerable mirror (col. 3, lines 59-64 and col. 4, lines 1-4).

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (5477304) in view of Danial et al. (6327065 B1) as applied to claim 1 above, and further in view of Hardy et al. (6612192 B2).

Regarding claim 3, Barrett et al. and Danial et al. disclose the claimed invention but do not specifically disclose a reaction mass. Hardy et al. discloses, in figures 1-5, at least one reaction mass (44) mounted below a second surface of the mounting plate (28) (col. 3, lines 16-29).

Regarding claim 4, Barrett et al. and Danial et al. disclose the claimed invention but do not specifically disclose a reaction mass. Hardy et al. discloses, in figures 1-5, at least one reaction mass (44) comprises: at least one flexure (48), and at least one position sensor (36) (col. 3, lines 16-29).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Spangler et al. (6532247 B2) discloses a steering mirror used in an electric discharge laser with fast wavelength correction.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N. Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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RICKY L. MACK
PRIMARY EXAMINER